

What is claimed is:

1. A method of inhibiting B or T cell proliferation or activation in a
5 mammal, which comprises administering a therapeutic agent
comprising:
 - a. a specific binding partner for TACI, wherein the specific binding
partner has TACI antagonist activity;
 - b. a specific binding partner for BCMA, wherein the specific binding
10 partner has BCMA antagonist activity;
 - c. both a and b; or
 - d. a specific binding partner for TACI and BCMA, wherein the
specific binding partner has TACI antagonist activity, BCMA
antagonist activity or both.
- 15 2. A method of inhibiting APRIL activity in a mammal, which comprises
administering a therapeutic agent comprising:
 - a. a specific binding partner for TACI, wherein the specific binding
partner has TACI antagonist activity;
 - b. a specific binding partner for BCMA, wherein the specific binding
20 partner has BCMA antagonist activity;
 - c. both a and b; or
 - d. a specific binding partner for TACI and BCMA, wherein the
specific binding partner has TACI antagonist activity, BCMA
antagonist activity or both.
- 25 3. A method of inhibiting TACI activity, BCMA activity, or both in a
mammal, which comprises administering a specific binding partner for
APRIL.
4. The method of Claim 3, further comprising administering a specific
binding partner for AGP-3.

5. A method of increasing T cell proliferation in a mammal, which comprises administering a therapeutic agent comprising:
 - a. a specific binding partner for TACI, wherein the specific binding partner has TACI agonist activity;
 - 5 b. a specific binding partner for BCMA, wherein the specific binding partner has BCMA agonist activity;
 - c. both a and b; or
 - d. a specific binding partner for TACI and BCMA, wherein the specific binding partner has TACI agonist activity, BCMA agonist activity or both.
- 10 6. A method of increasing APRIL activity in a mammal, which comprises administering a therapeutic agent comprising:
 - a. a specific binding partner for TACI, wherein the specific binding partner has TACI agonist activity;
 - 15 b. a specific binding partner for BCMA, wherein the specific binding partner has BCMA agonist activity;
 - c. both a and b; or
 - d. a specific binding partner for TACI and BCMA, wherein the specific binding partner has TACI agonist activity, BCMA agonist activity or both.
- 20 7. A method of treating B-cell lymphoproliferative disorders, which comprises administering a therapeutic agent comprising an amino acid sequence selected from:
 - a. the extracellular region of TACI (SEQ ID NO: 15);
 - 25 b. the extracellular region of BCMA (SEQ ID NO: 6);
 - c. the consensus region of TACI (SEQ ID NO: 16);
 - d. the consensus region of BCMA (SEQ ID NO: 7);
 - e. the TACI/BCMA extracellular consensus sequence (SEQ ID NO: 13).

8. A method of treating T-cell lymphoproliferative disorders, which comprises administering a therapeutic agent comprising an amino acid sequence selected from selected from:
 - a. the extracellular region of TACI (SEQ ID NO: 15);
 - b. the extracellular region of BCMA (SEQ ID NO: 6);
 - c. the consensus region of TACI (SEQ ID NO: 16);
 - d. the consensus region of BCMA (SEQ ID NO: 7);
 - e. the TACI/BCMA extracellular consensus sequence (SEQ ID NO: 13)..
9. A method of treating one or more solid tumors, which comprises administering a therapeutic agent comprising an amino acid sequence selected from selected from:
 - a. the extracellular region of TACI (SEQ ID NO: 15);
 - b. the extracellular region of BCMA (SEQ ID NO: 6);
 - c. the consensus region of TACI (SEQ ID NO: 16);
 - d. the consensus region of BCMA (SEQ ID NO: 7);
 - e. the TACI/BCMA extracellular consensus sequence (SEQ ID NO: 13)..
10. The method of Claim 9, wherein the tumor is selected from lung, gastrointestinal, pancreatic and prostate
11. The method of any of Claims 1 to 6, wherein the specific binding partner is an antibody.
12. The method of Claim 11, wherein the antibody is a monoclonal antibody.
13. The method of Claim 11, wherein the antibody is a fully human antibody, a humanized antibody, or an antibody derived from a phage display library.
14. The methods of any of Claims 1 to 6, wherein the specific binding partner is a peptide.

15. The method of Claim 14, wherein the specific binding partner is comprised within a molecule of the formula



wherein:

- 5 F^1 is a vehicle;

X^1 and X^2 are each independently selected from $-(L^1)_c-P^1-$, $-(L^1)_c-P^1-(L^2)_d-P^2-$, $-(L^1)_c-P^1-(L^2)_d-P^2-(L^3)_e-P^3-$, and $-(L^1)_c-P^1-(L^2)_d-P^2-(L^3)_e-P^3-(L^4)_f-P^4$

P^1 , P^2 , P^3 , and P^4 are each independently peptide sequences, wherein at least one is a specific binding partner;

- 10 L^1 , L^2 , L^3 , and L^4 are each independently linkers; and

a, b, c, d, e, and f are each independently 0 or 1, provided that at least one of a and b is 1.

16. The method of Claim 15, wherein the molecule comprises a structure of the formulae

- 15 X^1-F^1

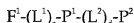
or



17. The method of Claim 15, wherein the molecule comprises a structure of the formula

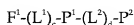
- 20 $F^1-(L^1)_c-P^1.$

18. The method of Claim 15, wherein the molecule comprises a structure of the formula



- 25 wherein one of P^1 and P^2 is a specific binding partner for TACI and the other is a specific binding partner for BCMA.

19. The method of Claim 15, wherein the molecule comprises a structure of the formula



wherein one of P¹ and P² is a specific binding partner for APRIL and the other is a specific binding partner for AGP-3.

20. The method of Claim 15 of the formula

$$F^1-(L^1)_c-P^1-(L^2)_d-P^2$$

5 wherein one of P¹ and P² is a specific binding partner for APRIL and the other is a specific binding partner for AGP-3.

21. The method of Claim 15, wherein the vehicle is an Fc domain.

22. The method of Claim 3, wherein the specific binding partner comprises a sequence selected from:

- 10 a. the extracellular region of TACI (SEQ ID NO: 15).
- b. the extracellular region of BCMA (SEQ ID NO: 6).
- c. the consensus region of TACI (SEQ ID NO: 16).
- d. the consensus region of BCMA (SEQ ID NO: 7).
- e. the TACI/BCMA extracellular consensus sequence (SEQ ID NO: 13).

23. The method of any of Claims 7, 8, 9 and 22, wherein the specific binding partner is covalently linked to a vehicle.

24. The method of Claim 23, wherein the vehicle is an Fc domain.

25. The method of Claim 3, wherein the specific binding partner is comprised within a molecule having an antibody sequence in which one or more antibody CDR regions are replaced by one or more sequences selected from:

- a. the extracellular region of TACI (SEQ ID NO: 15);
- b. the extracellular region of BCMA (SEQ ID NO: 6);
- 25 c. the consensus region of TACI (SEQ ID NO: 16);
- d. the consensus region of BCMA (SEQ ID NO: 7);
- e. the TACI/BCMA extracellular consensus sequence (SEQ ID NO: 13);

- f. the sequence of a peptide capable of specifically binding APRIL;
and
- g. the sequence of a peptide capable of specifically binding AGP-3.

26. The method of any of Claims 7, 8, and 9, wherein said amino acid

5 sequence replaces a CDR region within an antibody molecule.

27. A composition of matter of the formula



wherein:

F¹ is a vehicle;

10 X¹ and X² are each independently selected from -(L¹)_c-P¹, -(L¹)_c-P¹-

(L²)_d-P², -(L¹)_c-P¹-(L²)_d-P²-(L³)_e-P³, and -(L¹)_c-P¹-(L²)_d-P²-(L³)_e-P³-(L⁴)_f-P⁴

P¹, P², P³, and P⁴ are each independently peptide sequences, wherein
at least one is a specific binding partner for TACI, BCMA, or APRIL;

L¹, L², L³, and L⁴ are each independently linkers; and

15 a, b, c, d, e, and f are each independently 0 or 1, provided that at
least one of a and b is 1.

28. The composition of matter of Claim 27 of the formulae



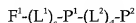
or

20 F¹-X².

29. The composition of matter of Claim 27 of the formula



30. The composition of matter of Claim 27 of the formula



25 wherein one of P¹ and P² is a specific binding partner for TACI and the
other is a specific binding partner for BCMA.

31. The composition of matter of Claim 27, wherein the vehicle is an Fc
domain.

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32. An isolated nucleic acid encoding the composition of matter of Claim 31.

33. The nucleic acid of Claim 32 including one or more codons preferred for Escherichia coli expression.

5 34. An expression vector comprising the nucleic acid of Claim 32.

35. A host cell transformed or transfected with the expression vector of Claim 34.

36. The host cell of Claim 35, wherein the cell is a prokaryotic cell.

37. The host cell of Claim 36, wherein the cell is Escherichia coli.

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